

REMARKS

It is desirable to produce finely formed transparent electrodes on glass substrates for image display devices that produce fine images. Moreover, it is of interest to produce such fine images in a plasma display panel; which comprises a plurality of cells in between a front substrate used as a display surface and a rear substrate; wherein said cells comprise barrier ribs and an image can be formed by generating plasma discharge in said cells. It is typically the case where transparent electrodes are formed on the surface of the front substrate. When such a configuration exists, it is essential to cover the transparent electrodes with a glass in order to protect the transparent electrodes from the plasma discharge produced in said cells; as if moisture is present on the surface of the glass substrate, or if an alkali component is present in the glass substrate, electrical current may flow to some extent via the surface of this glass substrate. To prevent said current from interacting with the plasma discharge, it is effective to form an insulating layer between the transparent electrodes. Given that the fine image display is dependent upon the transparent nature of the components used in the display, it is important that the insulating layer be transparent and that the dielectric constant of said insulating layer be compatible with the potential differences generated during the production of said fine images.

An aspect of the present invention is directed to a glass that addresses these issues, and may be achieved by employing a glass for covering electrodes, which consists essentially of, as represented by mass percentage based on the following oxides, from 35 to 55% of PbO, from 15 to 30% of B<sub>2</sub>O<sub>3</sub>, from 4 to 15% of SiO<sub>2</sub>, from 20 to 44% of B<sub>2</sub>O<sub>3</sub>+SiO<sub>2</sub>, from 0.5 to 10% of TiO<sub>2</sub>+ZrO<sub>2</sub>+La<sub>2</sub>O<sub>3</sub>+Ta<sub>2</sub>O<sub>5</sub>, from 0 to 15% of Al<sub>2</sub>O<sub>3</sub>, from 0 to 25% of BaO, from 0 to 1% of CuO and from 0 to 1% of CeO<sub>2</sub>.

The rejection of Claims 1, 3, and 5 under 35 U.S.C. § 102(b) over U.S. Patent No. 6,238,847 (hereinafter referred to as US '847) is respectfully traversed.

US '847 does not describe with sufficient specificity the glass for covering electrodes as claimed in Claim 1, and one can only arrive at the claimed invention by guessing.

US '847 is directed to a method of laser marking substrates, such as glass, in which a "marking material is applied to the surface of the substrate, followed by irradiation of a portion of the marking material to form a permanent marking on the substrate;" wherein the "marking material may comprise [a] glass frit" (see Abstract). The preferred compositional makeup of the glass frit is described (col. 3, *ℓ.* 63 – col. 4, *ℓ.* 12), and Table A provides a comparison between this preferred glass composition and the claimed glass composition.

Table A

№	Glass Component	<u>US '847</u>	<u>Claimed Glass</u>
		wt%	mass %
1	lead oxide	0-75	35-55
2	bismuth oxide	0-75	nc
3	silica	0-75	4-15
4	boron oxide	0-40	15-30
5	B <sub>2</sub> O <sub>3</sub> +SiO <sub>2</sub>	nd	20-44
6	zinc oxide	0-50	nc
7	aluminum oxide	0-15	0-15
8	zirconium oxide	0-15	№ 10
9	titanium oxide	0-8	№ 10
10	TiO <sub>2</sub> +ZrO <sub>2</sub> +La <sub>2</sub> O <sub>3</sub> +Ta <sub>2</sub> O <sub>5</sub>	0-23	0.5-10
11	phosphorous oxide	0-20	nc
12	calcium oxide	0-15	nc
13	manganese oxide	0-10	nc
14	copper oxide	0-7	0-1
15	cobalt oxide	0-5	nc
16	iron oxide	0-15	nc
17	sodium oxide	0-20	nc
18	potassium oxide	0-20	nc
19	lithium oxide	0-15	nc
20	fluoride	0-7	nc
21	barium oxide	nd	0-25
22	cerium oxide	nd	0-1

<sup>nc</sup>Not Claimed. <sup>nd</sup>Not Disclosed.

A first thing to note is that each component of the glass described in US '847 is optional. Which component should be present in the glass composition for a glass to be

marked with lasers? It is difficult to know exactly. A second thing to note is that components 1, 3, and 4 are broadly disclosed. How would one be able to arrive at the claimed invention in view of this broad disclosure?

The only apparent similarity between that which is claimed and that which is disclosed in US '847 is the fact that the two glasses may possibly share the same elemental oxides. But given the compositional breadth of the glass components, one can only guess as to the identity of the components of the glass described in US '847. Accordingly, it is believed that it is difficult to envisage a given sub-genus (or species) based on the disclosure of US '847. The Examiner is reminded of the Office guidelines, which states that "a generic chemical formula will anticipate a claimed species covered by the formula when the species can be 'at once envisaged' from the formula" (MPEP § 2131.02). In this case, Applicants believe that it is difficult to envisage any particular glass composition from the preferred glass composition that is described in US '847. Moreover, even if one of ordinary skill were to prepare a composition based on the description of US '847 this does not mean that one would obtain a glass in accordance with that which is currently claimed.

In order to better appreciate this point, Applicants file concurrently herewith a Declaration Under 37 C.F.R. § 1.132; wherein the Declarant, Mr. Satoshi Fujimine, prepared three glass compositions, denoted as Comparative Examples (CE1-CE3), in which the compositions fall within the range as described in US '847, but do not contain 0.5 to 10% of  $\text{TiO}_2 + \text{ZrO}_2 + \text{La}_2\text{O}_3 + \text{Ta}_2\text{O}_5$ , and thus do not exhibit properties that are acceptable within the context of the claimed invention. For the sake of convenience, Applicants' include herewith the tabulated data contained in the Declaration, and direct the Examiner's attention to the values of  $\alpha$  and  $T_{550}$  as shown in the following Table.

Table. Data Presented in Concurrently Filed Declaration.

	CE1	CE2	CE3
PbO	50.8	46.6	39.9
B <sub>2</sub> O <sub>3</sub>	21.8	19.3	22.5
SiO <sub>2</sub>	4.7	7.2	7.5
Al <sub>2</sub> O <sub>3</sub>	4.4	5.7	7.4
BaO	18.0	20.9	22.2
CuO	0.3	0.3	0.3
T <sub>S</sub> <sup>a</sup>	550	540	570
ε <sup>b</sup>	11.9	11.5	10.5
α <sup>c</sup>	91	89	82
T <sub>B</sub> <sup>d</sup>	550	550	550
T <sub>550</sub> <sup>e</sup>	71	----	75

<sup>a</sup>Softening temperature of the glass (unit: °C). <sup>b</sup>Relative dielectric constant. <sup>c</sup>Average linear expansion coefficient (unit: 10<sup>-7</sup>/°C). <sup>d</sup>Firing temperature as defined in the Specification on page 15 (unit: °C). <sup>e</sup>Percent transmittance at 550nm (unit: %).

It can be seen from the tabulated results from the above-identified Comparative Examples (CE1-CE3), compositions that fall inside the range of a glass described by US '847, have characteristics that are undesirable for the application of a glass covering at least one electrode in a plasma display panel device.

Inspection of percent transmittance of light value, T<sub>550</sub>, of Comparative Example 1 reveals a value that is unacceptably low.

Inspection of Comparative Example 2 shows that it was impossible to measure the percent transmittance of light value, T<sub>550</sub>, due to the fact that the glass was crystallized; which is unacceptable.

Inspection of value for the relative dielectric constant ε, as measured at 1 MHz at 20°C, reveals that the observed value, 10.5, is unacceptably low.

Declarants' data shows that the disclosure of US '847 may be used to prepare a glass, but in the absence of specific guidance one would not necessarily prepare a glass as claimed.

Accordingly, it is believed that US '847 does not anticipate the claimed invention.

It is requested that the Examiner acknowledge the same and withdraw this rejection.

Furthermore, it is believed that the claimed invention is unobvious over US '847 too. The reasons for this position are as follows. First, the disclosure of US '847 is nonanalogous to that which is claimed. As noted above, US '847 is directed to a laser marking method, in which glass containing pigments serve as the substrate for marking. Therefore, the problem to be solved by US '847 is not at all reasonably pertinent to the problem which the claimed invention intends to address. Consequently, this naturally leads one to wonder why one of ordinary skill would seek guidance from the disclosure of US '847 in order to solve the particular problem at hand. Furthermore, there is no suggestion contained in US '847 that would lead one to arrive at the claimed composition. (Please see MPEP § 2141.01(a) for the Office's guidelines, which states that in "order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.")

Second, since the claimed invention cannot be 'at once envisaged' from the disclosure of US '847. Does US '847 directly disclose the compositional makeup of a given glass? No. Does US '847 provide specific guidance? No. How then can one arrive at the claimed invention when it cannot be readily envisaged from this disclosure? It cannot. Consequently, it is believed that US '847 does not render the claimed invention obvious.

Accordingly, given the fact that US '847 is not pertinent to the problem at hand, and given that one of ordinary skill can only arrive at the claimed invention by guessing from the components described in US '847; it is believed that the claimed invention is unobvious over US '847.

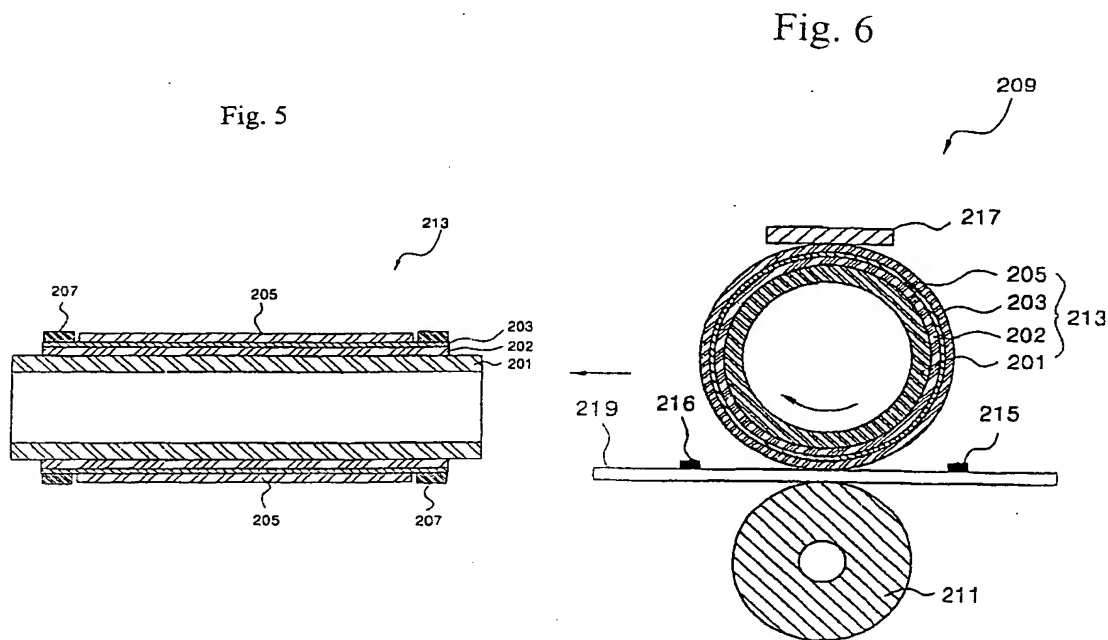
It is respectfully requested that the Examiner acknowledge the same and deem the claimed invention to be unobvious over this reference.

The rejection of Claims 1, 2, and 4 under 35 U.S.C. § 102(e), or in the alternative under 35 U.S.C. § 103(a), over US '582 is respectfully traversed.

US '582 neither anticipates nor renders obvious the claimed invention.

US '582 contains errors that creates a cloud of uncertainty as to the precise identity of the disclosed glass composition. It is believed that there is enough uncertainty present in this disclosure as to call into question the Office's assertion that US '582 anticipates, or renders obvious, the claimed invention. In order to fully appreciate this position the Examiner is presented with the following comments.

US '582 is directed to the development of a "heating roller for use in fixing a toner in an electrophotographic process" (see Abstract). Referring to Figures 5-6 and the text on pages 3-6 (see below; Figure 5 is a cross-section view of the heater roller as shown in Figure 6).



US '582 describes the makeup of the heating roller as follows:

FIG. 5 is a cross-sectional view showing a directly heating roller of an electrophotographic image forming apparatus according a first structural embodiment of the present invention. As shown in FIG. 5, the directly heating roller 213 includes an electrically insulating layer 202, a heat generating resistor layer 203 and a protection layer 205, which are sequentially stacked on a roller body 201. As shown, the roller body is generally cylindrical in

shape where the insulating layer covers the roller body. The roller body may be a hollow cylinder, or tube, as illustrated. A central portion of the heat generating layer **203**, that is, the portion between and not including the axial end portions of the heat generating layer, is protected by the protection layer, and an electrical current is supplied to the heat generating layer **203** through a pair of electrodes **207** arranged with one electrode on each end portion of the heat generating layer **203**.

The electrically insulating layer **202** and the heat-generating layer **203** deserve attention in context of this discussion.

The electrically insulating layer **202** is made from a glass that contacts a roller body **201** and a heat generating resistor layer **203**, but does not cover electrodes as applied to a plasma display panel application. The glass that can be used for **202** is described on page 4 [0060]-[0061], and for convenience its components are identified and compared to the claimed components in the following Table B.

Table B

No	Glass Component	US '582		
		Insulating Layer <sup>a</sup>	Glass Frit B <sup>b</sup>	Claimed Glass mass %
		wt%	wt%	
1	PbO	40-60	40-90	35-55
2	Bi <sub>2</sub> O <sub>3</sub>	----	----	nc
3	SiO <sub>2</sub>	20-40	10-40	4-15
4	B <sub>2</sub> O <sub>3</sub>	10-20	5-30	15-30
5	TiO <sub>2</sub>	0-5	0-10	No 8
6	Al <sub>2</sub> O <sub>3</sub>	0-10	0-20	0-15
7	B <sub>2</sub> O <sub>3</sub> +SiO <sub>2</sub>	30-60	15-70	25-40
8	TiO <sub>2</sub> +ZrO <sub>2</sub> + La <sub>2</sub> O <sub>3</sub> +Ta <sub>2</sub> O <sub>5</sub>	0-5	0-10	0.5-10
9	BaO	nd	nd	0-25
10	CuO	nd	nd	0-1
11	CeO <sub>2</sub>	nd	nd	0-1

<sup>a</sup>Insulating Layer **202** in contact with Roller Body **201** and Heat Generating Resistor Layer **203** (see Figs. 5 and 6 and page 3, [0051]). <sup>b</sup>Glass Frit B (page 5, [0079]).

<sup>nc</sup>Not Claimed. <sup>nd</sup>Not Disclosed.

It is true that the molecular composition of the glass of the insulating layer **202** contains all three of the required components that is presently claimed. However, the insulating layer **202** contains a SiO<sub>2</sub> content of 20-40 wt%, which is greater than that which is

presently claimed. The Examiner's attention is directed to page 7 of the Specification which states that if the amount of  $\text{SiO}_2$  exceeds 15%, then the softening temperature,  $T_s$ , of the glass will be high.

Therefore, the claimed composition is not anticipated by the glass composition employed for the insulating layer 202 described in US '582.

It is respectfully requested that the Examiner acknowledge the same.

What about the glass composition designated as Glass Frit B? Does this glass composition anticipate the claimed invention? No.

As explained to the Examiner on December 1, 2004, the disclosed composition for Glass Frit B is erroneous. The Examiner's attention is directed to the composition described in Table 4 of US '582, which for convenience is included in Table B. For instance in the case of Glass Frit B, inspection of the defined ranges of the required components  $\text{PbO}$  (40-90 wt%),  $\text{SiO}_2$  (10-40 wt%), and  $\text{B}_2\text{O}_3$  (5-30 wt%) give rise to confusion, as when the maximum amount of  $\text{PbO}$  is employed, addition of the minimum amount of the other required components results in a total that exceeds 100wt%.

Accordingly, one of ordinary skill must make a guess as to which component compositional range is in error in order to arrive at a glass that resembles that which is claimed. How can one readily envisage the claimed glass in view of a disclosure of a glass that is erroneous?

In this instance, the Office's guidelines are quite clear. The Examiner's attention is directed to the MPEP § 716.02 ("Inoperability of References"), which states in short that if an error is present in a disclosure, and if one of ordinary skill would recognize that the error is obvious, then the error necessarily means that the public was never in possession of an invention. That is, the invention was not accurately disclosed in a manner that would enable one of ordinary skill to practice that invention. Therefore, the disclosure is non-enabling by



the very presence of this error. Consequently, the reference (or in this instance that portion of the reference) cannot be used as "prior art" in order to reject a pending claim. There are several cases that address this issue, but the one case that is most relevant to this discussion is one in which the above reasoning was clearly enunciated in *In re Yale* (168 USPQ 46) and is included as an attachment.

In view of the differences in the ranges of SiO<sub>2</sub> (see glass for insulating layer) and the errors associated with the composition denoted as Glass Frit B, there can be no case of anticipation. It is kindly requested that the Examiner acknowledge the same and withdraw this rejection.

It is now reasonable to examine the reasons what the claimed invention is unobvious over the disclosure US '582.

First, US '582 is directed to a different problem at hand. As noted above, US '582 pertains to a glass composition employed for the Insulating Layer **202**, which is not designed for covering an electrode. The electrically insulating layer **202** is made from a glass that contacts a roller body **201** and a heat generating resistor layer **203**, but does not cover electrodes as applied to a plasma display panel application (MPEP § 2141.01(a)).

Second, the amount of SiO<sub>2</sub> employed for the glass used for the Insulating Layer **202** is much higher than that presently claimed. Even if the Examiner were to conclude that 15% SiO<sub>2</sub> was close to 20% SiO<sub>2</sub>, there is no reasonable expectation that this alteration would lead to properties desirable for covering electrodes.

In the regard to the composition of Glass Frit B, it is believed that the claimed invention is unobvious in view of this disclosure. Why? The errors outlined above provide a degree of uncertainty as to the exact composition makeup of this glass. Furthermore, this glass is not intended to cover an electrode. As noted above, the only layer that comes in contact with an electrode is the Heat Generating Resistor Layer **203**. This layer can be made

from an admixture of a Ru-based powder and a glass frit containing PbO (page 4, [0063]). That is, the material of Glass Frit B may be combined with a powdered ruthenium-based compound and a powdered silver compound in order to prepare a Heat Generating Resistor Layer (page 4, [0063]), but not only is the glass composition described in Table 4 for Glass Frit B erroneous, in order to contact an electrode it must contain ruthenium. This is in contrast to that which is claimed.

Finally, the disclosure of US '582 is not reasonably relevant to the problem addressed in the present application, as the former is directed to a heating roller that is capable of imprinting toner onto a substrate in an electrophotographic system. It is believed that a glass artisan who is given the task of producing glass for covering electrodes would not consult the disclosure of US '582.

Based on these points, it is believed that the claimed invention is unobvious over US '582.

The rejection of Claims 1 and 5-8 under 35 U.S.C. § 102(b) over US '345 is respectfully traversed.

US '345 does not describe the glass composition as claimed. In fact, US '345 is so fraught with errors that it is reasonable to conclude that this disclosure is at least non-enabling with respect to the "PbO-based glass" described in Table 1.B.

The Examiner's attention is directed to the following Table, which provides a comparison between the presently claimed composition and the "PbO-based glass" described in Table 1.B of US '345.

Table D

No	Glass Component	US '345 <sup>a</sup>	Claimed Glass
		wt%	mass %
1	PbO	45	35-55
2	B <sub>2</sub> O <sub>3</sub>	20	15-30
3	SiO <sub>2</sub>	20	4-15
4	Al <sub>2</sub> O <sub>3</sub>	5	0-15
5	CaO	0-10	nc
6	TiO <sub>2</sub>	3-10	No 8
7	SiO <sub>2</sub> +B <sub>2</sub> O <sub>3</sub>	ns	20-44
8	TiO <sub>2</sub> +ZrO <sub>2</sub> +La <sub>2</sub> O <sub>3</sub> +Ta <sub>2</sub> O <sub>5</sub>	3-10 <sup>b</sup>	0.5-10
9	BaO	ns	0-25
10	CuO	ns	0-1
11	CeO <sub>2</sub>	ns	0-1

<sup>a</sup>Example No. 15 from Table 1.B. <sup>b</sup>Based on TiO<sub>2</sub> alone. <sup>nc</sup>Not Claimed. <sup>ns</sup>Not Specified.

It is not proper to reject the claimed invention based on this portion of US '345's disclosure; as one of ordinary skill would recognize that this Table does not actually describe a "PbO-based glass." As noted above, Example Nos. 14-20 presented in Table 1.B should actually describe a Bi<sub>2</sub>O<sub>3</sub>-ZnO-based glass, not a PbO-based glass. Clearly then the description of at "PbO-based glass" is erroneous.

As outlined in the "SUBSTANCE OF THE INTERVIEW" section, the correct identity of the glass can be gleaned from inspection of the Table that appears on page 14 of JP '051, which is a publication of the Japanese priority document of US '345 (JP Application No. 9-326818) – page 14 of JP '051 shows that Example Nos. 14-20 and 23-24 are Bi<sub>2</sub>O<sub>3</sub>-Zn-based glasses – not PbO-based glasses. Since Table 1.B is wrong, it is improper to reject the claimed invention over the content of this table.

In this instance, the Office's guidelines are quite clear. The Examiner's attention is once again directed to MPEP § 716.02, which states that an inoperable reference cannot be used as prior art as the public never possessed the claimed invention (*In re Yale*; 168 USPQ 46).

Since the presence and recognition of the error pertaining to the "PbO-based glass" in Table 1.B of US '345 is an obvious error, it is respectfully requested that the Examiner adhere to the opinion set forth in the Yale court and withdraw this rejection.

Furthermore, the non-enabling disclosure of US '345 cannot serve to render the claimed invention obvious. It is kindly requested that the Examiner acknowledge the same.

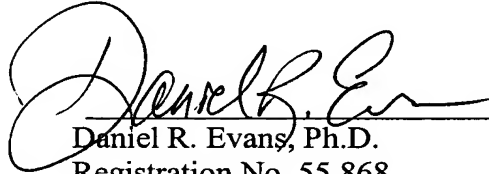
In view of the comments contained herewith, it is believed that the application is in a condition for allowance. Should the Examiner deem that a personal or telephonic interview would be helpful in advancing this application toward allowance, he is encouraged to contact Applicants' undersigned representative at the below-listed telephone number.

Respectfully submitted,  
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## **In re Yale**

**(CCPA)**

**168 USPQ 46**

**Decided Dec. 10, 1970**

**No. 8368**

**U.S. Court of Customs and Patent Appeals**

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### **Headnotes**

#### **PATENTS**

##### **1. Patentability - Anticipation - Publications - In general (§ 51.2271)**

##### **Patentability - Composition of matter (§ 51.30)**

It is unnecessary in Von Bramer-type analysis to determine whether one of ordinary skill in the art would know how to make compound stated by chemical formula in reference publication since the ordinary chemist would not consider making the compound inasmuch as it would be apparent to one of ordinary skill in the art that listing of compound was typographical error; since listing of compound was an error obvious to one of ordinary skill in the art, it cannot be said to describe or suggest that compound to those in the art; public was not put in possession of the compound.

##### **Particular patents-Anesthetic**

Yale, Inhalation Anesthetic, claims 1 to 10 of application allowed.

#### **Case History and Disposition:**

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##### **Appeal from Board of Appeals of the Patent Office.**

**Application for patent of Harry Louis Yale, Serial No. 554,671, filed June 2, 1966; Patent Office Group 120. From decision rejecting claims 1 to 10, applicant appeals. Reversed.**

##### **Attorneys:**

**Lawrence S. Levinson, New Brunswick, N. J. (Robert Alpher, New York, N. Y., and Theodore J. Criares and Merle J. Smith, both of New**

**Brunswick, N. J., of counsel) for appellant.**

**S. Wm. Cochran (Jack E. Armore of counsel) for Commissioner of Patents.**

**Judge:**

Before Rich, Almond, Baldwin, and Lane, Associate Judges, and Re, Judge, United States Customs Court, sitting by designation.

### **Opinion Text**

**Opinion By:**

**Almond, Judge.**

This is an appeal from the decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the rejection of claims 1-10 of appellant's application entitled "Inhalation Anesthetic." <sup>1</sup> No claims have been allowed.

The invention relates to a chemical compound, 3-bromo-3-chloro-1,1,1,2,2-pentafluoropropane, which has the formula  $\text{CF}_3\text{CF}_2\text{CHClBr}$ . Azeotropic mixtures of the compound with diethyl ether, as well as mixtures of the compound with a preservative such as thymol, are disclosed. The compound or its azeotrope, with or without a preservative added, is useful as an inhalation anesthetic and may be administered with a source of oxygen. Claim 1 recites the compound; claim 2 is for the compound in pure form; claim 3 covers an azeotropic mixture; claims 4-5 cover a mixture of the compound with a preservative; and claims 6-10 are drawn to the method of inducing anesthesia with the compound.

The references relied upon were:

Suckling et al. (Suckling) 3,097,133 July 9, 1963

Murray et al. (Murray) 3,177,260 April 6, 1965

Clements et al. (Clements), Proc. Nat'l Acad. of Sci., Vol. 48, 1962, pages 1008-1014.

Chemical Abstracts, Vol. 58, April 1963, 7264(h)-7265(a).

The Clements article reports the results of research conducted to determine how strongly inert anesthetic gases interact with surface films on water. Fig. 3 shows a graph of Log P vs. Log P<sub>f</sub> for agents for anesthesia in mice.  $\text{CF}_3\text{CF}_2\text{CHClBr}$  is one of the nine compounds plotted on the graph. This compound is not mentioned anywhere else in the article and is not plotted on any of the other graphs.

Suckling discloses inhalant anesthetic compositions consisting of fluorinated hydrocarbons, but not  $\text{CF}_3\text{CF}_2\text{CHClBr}$ . The anesthetic may be administered with a source of oxygen; it may be mixed with a stabilizer such as thymol, as well as with another inhalant anesthetic such as ether.

Murray shows that other halogenated hydrocarbons have been made by the reaction of a halogen with a less halogenated starting material, the general method used for preparing appellant's compound; and the Chemical Abstract reference shows that the starting materials used in preparing appellant's compound are known.

All the claims were rejected under 35 U.S.C. 103 as unpatentable over Clements in view of Suckling. The examiner relied upon the disclosure of the formula  $\text{CF}_3\text{CF}_2\text{-CHClBr}$  in Fig. 3 of the Clements article pertaining to anesthetics; and with respect to the admixtures of claims 3-5 and the administration techniques of claims 6-10, he referred to the Suckling

patent. The Board of Appeals affirmed that rejection.

Appellant apparently does not take issue with the obviousness of the combination of references if Clements is found to be a valid reference with regard to the disclosure of  $\text{CF}_3\text{CF}_2\text{CHClBr}$ . It is appellant's main contention that the listing of  $\text{CF}_3\text{CF}_2\text{CHClBr}$  in Clements was a typographical error. Appellant argues that it would be obvious to one of ordinary skill in the art that the reference to  $\text{CF}_3\text{CF}_2\text{CHClBr}$  in Clements is an error since (1) only known compounds were discussed in the article; (2) all the compounds tested were plotted as to Log P in Fig. 1; (3)  $\text{CF}_3\text{CF}_2\text{CHClBr}$  in Fig. 3 is the only compound listed in any figure which is not also listed in Fig. 1, and (4) the Log P in Fig. 3 at which  $\text{CF}_3\text{CF}_2\text{CHClBr}$  is plotted is the Log P for  $\text{CF}_3\text{CHClBr}$  in Fig. 1 and the two compounds are not likely to have the same Log P. In addition, appellant submitted two letters, one of which was from a chemist named Dr. Hofmann to Kenneth M. Wilson, the co-author

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of the Clements article, inquiring whether the listing of  $\text{CF}_3\text{CF}_2\text{CHClBr}$  was a typographical error. The response from Wilson stated:

Figure 3 of the paper by Dr. J. A. Clements and myself is, of course, an error as you suppose and  $\text{CF}_3\text{CF}_2\text{CHClBr}$  should read  $\text{CF}_3\text{CHClBr}$ .

It is appellant's position that since the listing of  $\text{CF}_3\text{CF}_2\text{CHClBr}$  in Clements is clearly an error, that reference does not provide a valid disclosure of the compound.

The board considered appellant's arguments in this regard but found them unpersuasive. It stated that there was no showing that  $\text{CF}_3\text{CHClBr}$  and  $\text{CF}_3\text{CF}_2\text{CHClBr}$  could not have the same Log P value, nor did it find any indication in the article that all of the compounds listed in Fig. 3 were meant to correspond to the compounds listed in Fig. 1. In regard to the Hofmann-Wilson letters, the board refused to accept them as evidence on the ground that more authentication is required than the mere filing of copies of letters. It was then stated by the board that even if the asserted error were properly established, such error would not serve to avoid the rejection under the particular circumstances of the instant case.

Appellant responded to the board's decision with a request for reconsideration and an affidavit by Dr. Hofmann which, among other things, identified the previously filed correspondence. The board accepted the affidavit only to the extent that it identified such correspondence, but adhered to its previous decision on the ground that, even assuming an error to exist, the reference is still good since in a printed publication under 35 U.S.C. 102(b) there is no need for actual possession of the described compound by the author. Actually, all the claims were rejected under 35 U.S.C. 103, and thus the reference was viewed as to what it reasonably taught to those of ordinary skill in the art. It was the board's position that the error in Clements is not apparent on the face of the document and one of ordinary skill in the art, not knowing of the error, would be taught that  $\text{CF}_3\text{CF}_2\text{CHClBr}$  is an anesthetic. In addition, it was felt that the Muray and Chemical Abstract references indicate that the chemist of ordinary skill would know from the available art how to make the compound. No claims were rejected over the Muray and Chemical Abstract references alone, but rather those references were used with Clements in accordance with a doctrine which arose in *In re Von Bramer*, 29 CCPA 1018, 127 F.2d 149, 53 USPQ 345 (1942).

The Von Bramer doctrine has been discussed by us at length on several occasions, one being *In re Brown*, 51 CCPA 1254, 329 F.2d 1006, 141 USPQ 245 (1964), which is relied upon by appellant and which states (at 1259, 141 USPQ at 248-249):

To the extent that anyone may draw an inference from the Von Bramer case

that the *mere* printed conception or the *mere* printed contemplation which constitutes the designation of a "compound" is sufficient to show that such a compound is old, regardless of whether the compound is involved in a 35 U.S.C. 102 or 35 U.S.C. 103 rejection, we totally disagree. [Footnotes omitted.] \* \* \*

We think, rather, that the true test of any prior art relied on to show or suggest that a chemical compound is old, is whether the prior art is such as to place the disclosed "compound" in the possession of the public. [Citations omitted.]

Applying this test, the question here is not whether the listing of CF<sub>3</sub>CF<sub>2</sub>CHClBr in Clements, if it were an error, evidenced a conception of the compound, for surely it did not. Rather, the question is whether the listing of CF<sub>3</sub>CF<sub>2</sub>CHClBr describes to one of ordinary skill in the art the compound and whether one of ordinary skill in the art would know how to make the compound so that the mere listing of the compound places it in the possession of the public.

The solicitor cites *In re Land*, 51 CCPA 781, 324 F.2d 312, 139 USPQ 282 (1963), and *In re Pio*, 42 CCPA 746, 217 F.2d 956, 104 USPQ 177 (1954), as controlling in this case. However, those decisions, like *In re Von Bramer*, supra, merely stand for the proposition that the disclosed suggestion, whether or not workable or even intended at the time disclosed, made the invention obvious to one of ordinary skill in the art. In other words, the disclosed suggestion put one of ordinary skill in the art in possession of all the aspects of the invention since he would know how to implement the invention from the mere suggestion.

[1] The Patent Office believes this to be one of those situations since Muray and the Chemical Abstract references indicate that the chemist of ordinary skill in the art would know how to make CF<sub>3</sub>CF<sub>2</sub>CHClBr. We find it unnecessary in the Von Bramer-type analysis to determine whether one of ordinary skill in the art would know how to make the compound since we do not believe the ordinary chemist would even consider making the compound.

It is our opinion that not only is the listing

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of CF<sub>3</sub>CF<sub>2</sub>CHClBr in Clements a typographical error but also this fact would be apparent to one of ordinary skill in the art when reading the Clements article. Since it is an obvious error, it cannot be said that one of ordinary skill in the art would do anything more than mentally disregard CF<sub>3</sub>CF<sub>2</sub>CHClBr as a misprint or mentally substitute CF<sub>3</sub>CHClBr in its place. Certainly he would not be led by typographical error to use the erroneous compound as an anesthetic even if as a chemist of ordinary skill in the art he would know how to prepare the compound. He simply would not get so far in the thought process as to determine if he knew how to make CF<sub>3</sub>CF<sub>2</sub>CHClBr, as it would have long since been discarded by him as an obvious typographical error.

Appellant has gone through a detailed review of the Clements article to point out the inconsistencies which make it apparent that the listing of CF<sub>3</sub>CF<sub>2</sub>CHClBr is an error. Any number of these individually or cumulatively would, we believe, alert one of ordinary skill in the art to the existence of the typographical error. Suffice it to say that the one we immediately noted was the inconsistency between Figs. 1 and 3 of Clements. The anesthetic gases tested by Clements are not mentioned in the written discussion; rather, they all are only listed in Table 1 or plotted on the graphs of Figs. 1-5. Only Fig. 1 plots all the compounds except, of course, CF<sub>3</sub>CF<sub>2</sub>CHClBr. Except for CF<sub>3</sub>CF<sub>2</sub>CHClBr, no compound not listed in Fig. 1 is plotted elsewhere, although each graph has a different number of compounds plotted on it. A comparison of Fig. 3 and Fig. 1 shows that eight out of the nine compounds in Fig. 3



(except  $\text{CF}_3\text{CF}_2\text{CHClBr}$ ) appear in Fig. 1. All eight have the identical Log P  $\mu$  in Fig. 3 that was listed for them in Fig. 1. The only exception to this is  $\text{CF}_3\text{CF}_2\text{CHClBr}$  which was not listed in Fig. 1 and which has the Log P  $\mu$  which was assigned in Fig. 1 to  $\text{CF}_3\text{CHClBr}$ . We have no doubt that the chemist of ordinary skill in the art would readily recognize that  $\text{CF}_3\text{CF}_2\text{CHClBr}$  does not belong in Fig. 3 and must be an error.

Our conclusion as to the obviousness of the error in Clements is supported by the correspondence between Dr. Hofmann and the co-author of the Clements article, Kenneth Wilson. No question has been raised concerning the admissibility of the correspondence since the board considered the correspondence and explicitly accepted the affidavit of Dr. Hofmann to the extent that it identified the correspondence. However, the board did question the probative weight of this evidence because it had not been sworn to. In our opinion, while this may be said to detract to some extent from the weight of the evidence, the belief of Dr. Hofmann and Mr. Wilson, as indicated in the correspondence, that the listing of  $\text{CF}_3\text{CF}_2\text{CHClBr}$  was an obvious typographical error and the inconsistencies in the Clements article itself, as pointed out above, make it clear that the error in Clements would be apparent to one of ordinary skill in the art.

Since the listing of  $\text{CF}_3\text{CF}_2\text{CHClBr}$  in Clements is an error obvious to one of ordinary skill in the art, it cannot be said to describe or suggest that compound to those in the art. The public is not put in possession of the compound; thus, it would not be obvious to use it as an inhalant anesthetic as in Suckling or to mix it with the various other compounds which are mixed with the fluorinated hydrocarbons of Suckling.

Therefore, the decision of the board is *reversed*.

### Footnotes

Footnote 1. Serial No. 554,671 filed June 2, 1966 as a continuation-in-part of serial No. 365,173 filed May 5, 1964.

- End of Case -

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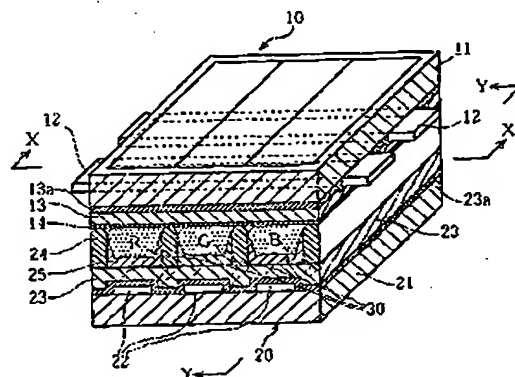
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(54) 【発明の名称】 プラズマディスプレイパネル及びプラズマディスプレイパネルの製造方法

(57) 【要約】

【課題】 PDPにおいて、誘電体を薄く形成しても絶縁破壊が発生しにくいようにすることを第1の目的とし、ガラス基板の厚さを従来より薄くしても、PDP製造時にガラス基板に割れなどが生じるのを防止することを第2の目的とする。

【解決手段】 PDPにおいて、パネルの表面の銀電極上に誘電体をコートする際に、銀電極の表面を、CVD法で、「表面に水酸基を生成する金属酸化物」からなる層13aで被覆し、その上に誘電体層13をコートする。或は、誘電体層を、CVD法のような真空プロセスを用いて金属酸化物で形成することによって、第1の目的が実現できる。また、誘電体層を真空プロセス法或は溶射法で形成すれば、誘電体層の焼成に基づくパネルの反りや割れの発生がなくなり、第2の目的も達成される。また、ガラス基板11、21の材料として、アルカリ成分が6.5重量%以下の硼珪酸ガラスを用いれば、より効果がある。



材料 番号	第1, 20 電極材料	第1, 2電極上の 金属膜(μm)	第1, 2電極上の誘電体ガラス組成 (重量%)						ガラスの 誘電率	ガラスの 膜厚	200V, 40kHzでの エーゼンク後の 漏れ電流(μA/cm <sup>2</sup> )	パネル効率 α/cm <sup>2</sup>
			SiO <sub>2</sub>	ZnO	B <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	CaO	TiO <sub>2</sub>				
14	Ag	CVD法 による ZnO(0.1 μm)	45	23	22	5	5	0	12	14 μm	0	510
15	Ag	“ ZnO(0.3 μm)	45	20	20	5	5	5	18	13 μm	0	512
16	Ag	“ MgO(0.5 μm)	30	37	10	3	10	10	24	13 μm	0	513
17	Ag	“ TiO <sub>2</sub> (1.0 μm)	40	25	23	2	3	7	20	12 μm	0	515
18	Ag	“ SiO <sub>2</sub> (1.0 μm)	“	“	“	“	“	“	“	11 μm	0	515
19	Ag	“ Al <sub>2</sub> O <sub>3</sub> (0.5 μm)	“	“	“	“	“	“	“	12 μm	0	514
20	Ag	“ Cr <sub>2</sub> O <sub>3</sub> (0.3 μm)	“	“	“	“	“	“	“	12 μm	0	514
21	Cr-Cu-Cr	“ ZnO(6 μm)	0	0	0	0	0	0	—	0	1	520
22	Cr-Cu-Cr	“ Cr <sub>2</sub> O <sub>3</sub> (6 μm)	0	0	0	0	0	0	—	0	2	519
23	Ag	“ SiO <sub>2</sub> (0.5 μm) TiO <sub>2</sub> (0.2 μm)	40	25	23	2	3	7	20	10 μm	0	520
24*	Ag	なし	40	25	23	2	3	7	20	15 μm	8	480

\* 試験番号No.13, 24は比較例